Barotropic Tidal Mixing Effects in a Coupled Climate Model: Oceanic Conditions in the Northern Atlantic

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Abstract

Impacts of mixing driven by barotropic tides in a coupled climate model are investigated by using an atmosphere-ocean-ice-land coupled climate model, the GFDL CM2.0. We focus on oceanic conditions of the northern Atlantic. Barotropic tidal mixing effects increase the surface salinity and density in the northern Atlantic and decrease the RMS error of the model surface salinity and temperature fields for the observational data.